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ABSTRACT

The issue of increasing the effectiveness of alumni development and fund raising programs to ensure quality in academic programs and campus life for the coming decade was examined. The study's primary purposes were to: (1) describe the development of a comprehensive decision support system for alumni and fund raising activities at one independent university--the University of Hartford, Connecticut; (2) examine specific research and management applications of that system; and (3) feature examples of effective analyses and reports it can generate. Discussions focused on early collaboration between institutional researchers and advancement professionals which facilitated the study and led to construction of a multipurpose alumni survey. Preliminary results indicated that administrators desiring to strengthen fund raising programs should concentrate on the following areas: improve community and donor relationships; gain the confidence of the institution and the participation of its president; build commitment among staff to improve outcomes; interact with people (including staff); and participate in other cultivation/solicitation activities. Contains 18 references. (GLR)

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Design and Implementation of a Decision Support System For Institutional Advancement

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Jean Endo
Chair and Editor
Forum Publications Editorial
Advisory Committee

Abstract

Colleges and universities must increase the effectiveness of alumni development and fund raising programs to ensure quality in academic programs and campus life for the coming decade. This presentation details (1) the design of a comprehensive decision support system responsive to institutional advancement needs, (2) examines specific research and management applications of that system, and (3) features effective analyses and reports it generates. Discussion also will focus on early collaboration between institutional researchers and advancement professionals which facilitated this effort and led to construction of a multipurpose alumni survey. Institutional researchers involved in alumni, development, fund raising, outcomes assessment, or decision support will find this paper of particular interest.

Introduction

In his classic study of Great American Universities, Edwin Slosson (1910) linked a university's size and age to its potential effect on society -- for taken "together [these factors] give a large body of living alumni." In turn, "this has a practical value to the university in securing students and benefactions, and to the student by giving him friendly aid wherever he may go. The alumni list is in a way the measure of the influence of the university in current affairs" (p. 475). Universities had begun to take their graduates seriously by the latter half of the nineteenth century; as they attained eminence and wealth, alumni became a more powerful force in the life of institutions, and alma mater turned to them for "new means of support" (Rudolph, 1965, p. 189). A century later alumni/alumnae constitute the largest single source of voluntary support for higher education, accounting for twenty-five percent of all such gifts in 1987-88 ("Sources of Voluntary Support," 1989, p. 23). Meanwhile, colleges continue to "[clamor] for alumni dollars in unprecedented ways" (Greene, 1989, p. A27).

With over 1.8 million degrees awarded by postsecondary institutions in 1986-87 alone ("The Nation", 1989, p. 8) the total number of college and university alumni mounts at an astonishing rate each year. So, too, does the task of keeping track of these far-flung graduates. "Basic information [on alumni and their giving records] may or may not be current. The whereabouts of most alumni may or may not be known" (Maves, 1988, pp. 13-14). Until overwhelmed by sheer numbers, college catalogs often provided a formal (and fairly reliable) record of the previous year's degree recipients. However, "in the past, institutions had no concrete incentives to keep systematic track of alumni" (Melchiori, 1988, p. 6). During the 1980s and into the 1990s, "more aggressive marketing needs for prestige, students, and additional financial resources" have created (and will continue to create) a demand for increasingly sophisticated information systems -- not only as a way of following alumni but also as a basis for intensive research (Melchiori, 1988, p. 6).

While "collection of information on alumni is nothing new" (Dunn, 1988, p. 77), more extensive alumni research has only recently "grown from infancy to early adolescence" (Dunn, 1989, p. 2). A solid literature base illumines the philosophy and practice of institutional advancement, but "there is a paucity of research in areas [related to alumni and fund raising] where results might really be of use to the practitioners" (Dunn, 1989, p. 9). Even by the mid-

1980s, "few studies. . .[had examined] the personal, social or academic characteristics of alumni with regard to their eventual financial contributions and donations of time to their college or university" (McNally, 1985, p. 16). Of the research that has been done, "much remains fugitive," (e.g., lacking dissemination through scholarly conferences or publications), and thus is not readily available to researchers (Grace, 1989, p. 2).

In 1985 a distinguished group of thirty presidents, executives, journalists, professors, and institutional advancement professionals convened by the Council for Advancement and Support of Education (CASE) assessed the state of the institutional advancement profession (which comprises alumni and fund raising activities as well as public relations, government relations, publications, and enrollment management). All participants concurred that (1) sufficient research was not yet available for the field and that (2) further "scholarly research could provide institutions -- and practitioners in particular -- with information that would enable them to enhance their institutions" (Grace, 1989, p. 1). Consequently, one of the panel's recommendations urged CASE to "pursue active partnerships with researchers" (Grace, 1989, p. 1).

Indeed, maturation of the institutional advancement profession and its accompanying literature in the past decade has set the stage for fruitful collaboration of fund raising personnel with institutional researchers/ planners, and other higher education scholars (Dunn, 1986; Dunn, 1989; Melchiori, 1988). By joining forces to build sound conceptual frameworks, research designs, and information systems to support executive and management decisions, institutional advancement and research personnel not only strengthen their institutions but benefit professionally as well (Dunn, 1986).

The 1985 panel also prompted CASE to expand access to information and examine the use of electronic technologies. With alumni research and development efforts now yielding "better information on a large fraction of the alumni population," sophisticated yet flexible computer technologies are essential to maintaining and analyzing comprehensive databases within or across institutions. Such technologies also enable colleges and universities to tackle more complex questions concerning alumni attitudes and prospective donors (Dunn, 1988, p. 78).

Specifically, Dunn (1989) suggests that institutional fund raising efforts would be facilitated by research or decision support systems which determine a measure of overall giving capacity; identify prospects at their optimal giving levels; match prospects with

projects; analyze and document the success and methodology of deferred giving activities; and identify factors about an institution's student recruitment, programs, alumni and donor relations, or other activities which are conducive to fund raising.

Purpose of the Paper

This paper outlines a means of converting the preceding concepts into concrete alumni and fund raising systems. Its primary purposes are to (1) describe the development of a comprehensive decision support system for alumni and fund raising activities at one independent university in the northeastern United States, (2) examine specific research and management applications of that system, and (3) feature examples of effective analyses and reports it can generate.

The University Context

The following disussion focuses on the design and implementation of an alumni and development decision support system at the University of Hartford, Connecticut. Currently serving over 4700 full-time and 2700 part-time students, the University includes the College of Arts and Sciences; the College of Education, Nursing, and Health Professions; the College of Engineering; the College of Basic Studies; the Barney School of Business and Public Administration; the Hartford Art School; the Hartt School of Music; and the Ward College of Technology. The University's founding dates back to the establishment of the first of its original colleges in 1877. However, as a chartered entity the institution is just over thirty years old, formed through the merger of three separate colleges in 1957. An independent institution it "is supported by its fees, and by the gifts of alumni, friends, corporations, and foundations" (Undergraduate Bulletin, 1989, p. 12). Like its fellows in the private sector, the University "has depended historically on alumni [and its corporate friends], as providers not only of financial support but also of voluntary services -- recruitment, mentoring, placement assistance -- that expand institutional effectiveness without associated expense" (Maves, 1988, p. 14).

As recognized in the University of Hartford's 1988 strategic plan, "The importance of building a strong base of annual support cannot be overemphasized. We must find ways to convince our Regents, alumni, parents and friends that their gifts to the Annual Fund are not

'frills' but are a necessary component of the operating budget without which we would not be able to provide quality education at an affordable price." To further stimulate development efforts, the plan recommended,

1. Initiation of a more sophisticated prospect research and tracking system which capitalizes on electronic technologies for information storage, retrieval, and analysis
2. Identification of "leadership donors" from among the institution's growing alumni population, parents, and corporate community
3. Continuation of efforts to coordinate particular donor interests with annual operating needs of the eight colleges
4. More aggressive marketing of planned giving options to appropriate donor constituencies, and
5. Compilation of a new alumni directory, updated from a comprehensive alumni questionnaire, to build the type of computer database required for effective organization of volunteer effort and for research on donor prospects.

Clearly, the University's fulfillment of these information-based goals would shift alumni relations and fund raising potential to a higher plane. By early 1989, a national vendor's Alumni and Donor Development System had been installed on the mainframe, and planning documents called for the Office of Planning and Institutional Research to work with the University's Computer Center and Development Office in designing a flexible prospect research and decision support system.

Overview of EIS/DSS Design

The conceptual framework underlying this information system for alumni development and fund raising is presented in Figure 1. In the research design, the voluntary participation and dollar contributions of alumni and other donors are the two primary criteria for success. Participation of an alumnus or donor, whether it involves the contribution of time or money, depends on some balance between the individual's motivation (predisposition) to give and capacity (resources) to give. By tracking gift records of an alumnus or donor over a period of years, a researcher can discern patterns for each individual based on gift frequency, gift amounts, and restrictions on gift designations, and therefore predict the likely scope and level

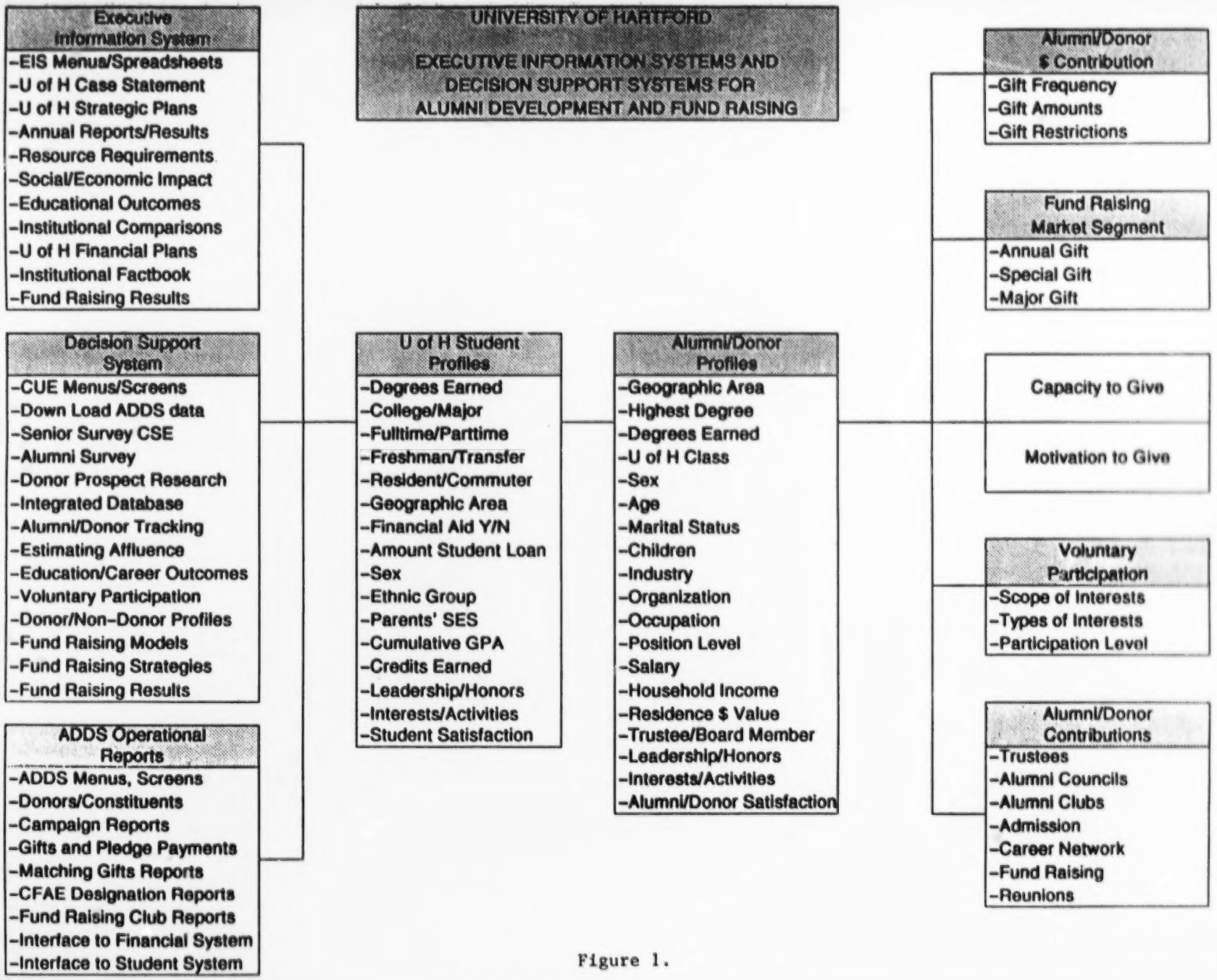
UNIVERSITY OF HARTFORD
EXECUTIVE INFORMATION SYSTEMS AND DECISION SUPPORT SYSTEMS FOR ALUMNI DEVELOPMENT AND FUND RAISING
Executive Information System
-EIS Menus/Spreadsheets
-U of H Case Statement
-U of H Strategic Plans
-Annual Reports/Results
-Resource Requirements
-Social/Economic Impact
-Educational Outcomes
-Institutional Comparisons
-U of H Financial Plans
-Institutional Factbook
-Fund Raising Results
Decision Support System
-CUE Menus/Screens
-Down Load ADDS data
-Senior Survey CSE
-Alumni Survey
-Donor Prospect Research
-Integrated Database
-Alumni/Donor Tracking
-Estimating Affluence
-Education/Career Outcomes
-Voluntary Participation
-Donor/Non-Donor Profiles
-Fund Raising Models
-Fund Raising Strategies
-Fund Raising Results
ADDS Operational Reports
-ADDS Menus, Screens
-Donors/Constituents
-Campaign Reports
-Gifts and Pledge Payments
-Matching Gifts Reports
-CFAE Designation Reports
-Fund Raising Club Reports
-Interface to Financial System
-Interface to Student System
U of H Student Profiles
-Degrees Earned
-College/Major
-Fulltime/Parttime
-Freshman/Transfer
-Resident/Commuter
-Geographic Area
-Financial Aid Y/N
-Amount Student Loan
-Sex
-Ethnic Group
-Parents' SES
-Cumulative GPA
-Credits Earned
-Leadership/Honors
-Interests/Activities
-Student Satisfaction
Alumni/Donor Profiles
-Geographic Area
-Highest Degree
-Degrees Earned
-U of H Class
-Sex
-Age
-Marital Status
-Children
-Industry
-Organization
-Occupation
-Position Level
-Salary
-Household Income
-Residence $ Value
-Trustee/Board Member
-Leadership/Honors
-Interests/Activities
-Alumni/Donor Satisfaction
Alumni/Donor $ Contribution
-Gift Frequency
-Gift Amounts
-Gift Restrictions
Fund Raising Market Segment
-Annual Gift
-Special Gift
-Major Gift
Capacity to Give
Motivation to Give
Voluntary Participation
-Scope of Interests
-Types of Interests
-Participation Level
Alumni/Donor Contributions
-Trustees
-Alumni Councils
-Alumni Clubs
-Admission
-Career Network
-Fund Raising
-Reunions

Figure 1.

of future giving. Similarly, patterns of active participation as a trustee, member of alumni committees, admissions representative, or career mentor for more recent graduates can be used to forecast future involvement.

As the list of alumni and prospective donors lengthens, it becomes increasingly difficult to match alumni development and fund raising goals for specific programs or campaigns to individuals on a case by case basis. To perform this matching effectively and to forecast giving potential, the researcher needs an effective decision support system that can cluster individuals into market segments for analysis based on their alumni/donor profiles. Selection of market segments can be performed using a relational database to identify alumni/donor cases with theoretically relevant variables (e.g., degree/non-degree, estimated salary, reunion attendance, graduating class). Also statistical analysis packages for cluster analysis, discriminant analysis, and regression analysis can be applied empirically to define market segments. Summary statistics for each market segment are easily aggregated using relational database summary tables and report forms or descriptive statistics tables (e.g., SPSS PC Tables).

The Decision Support System (DSS) which emerged from these concepts is a system of menus and screens written in Foxpro relational database. The DSS imports data files downloaded from ADDS and other IBM mainframe transaction processing systems, integrates that data with external survey data, builds an alumni/donor tracking record over multiple years, and prepares statistical summaries and analyses on a personal computer. The key element in this strategy is a master data dictionary and Common User Environment, an easy to use, flexible, and powerful system of menus and screens that allows users to control a relational database (Foxpro) and a statistical analysis package (SPSS PC) to satisfy their information requirements without programming. Following execution of the database or statistical programs, the reports can be printed, browsed on the screen, or retrieved from Executive Information System menus.

The Executive Information System is a system of menus, screens, and macros (saved commands) written in Lotus 123 which enables decision makers and their decision support staff to navigate through descriptive menu choices to obtain strategic planning and management information on demand. Using a light-bar menu system, the user can retrieve the institutional case statement, strategic plan, or annual reports as text; bring up a spreadsheet report

or forecasting model from the factbook; view summary statistics prepared with a relational database or statistical analysis program; chart graphs to the screen interactively; review a slide show presentation of an issue; or print a desk-top quality report using ALLWAYS.

Data Sources

The two boxes at the center of Figure 1 illustrate the types of predictor variables assembled in the multi-year alumni/donor tracking record. The integrated research database for alumni and fund raising is constructed from several sources: (1) mainframe transactions from the Integrated Student Information System (ISIS), (2) mainframe transactions from the Alumni and Donor Development System (ADDS), (3) a senior survey (College Student Experiences Questionnaire), (4) an alumni directory and alumni outcomes survey, and (5) external databases for estimating donor wealth.

The mainframe's Alumni and Donor Development System offers the Institutional Advancement staff an efficient transaction processing system for maintaining alumni/donor, activity, and gift records and for building a comprehensive alumni development and fund-raising database. Standard operating reports available through ADDS provide listings, roll-ups and tabulations prepared on the IBM mainframe on a weekly or monthly basis. As an online data entry system, ADDS was not intended to become the "more sophisticated prospect research and tracking system" proposed in the University's planning documents. Thus, creation of the Decision Support System involved downloading records from the mainframe to microcomputers in the Office of Planning and Institutional Research. Installation of a new cross-campus fiber optic network facilitated this process; files were first transferred to the network, allowing Planning and Institutional Research staff to import the data directly into a micromputer database.

The Database Structure

Prior to downloading the data, the Office of Planning and Institutional Research worked closely with administrators and staff in Institutional Advancement to learn the types of records included in alumni files, to clarify the variables or elements which were routinely maintained for each of those records, and, perhaps most important for research purposes, to determine what additional elements could easily be incorporated if the raw data were available.

Although still a youthful institution, the University of Hartford's alumni population alone numbers over 30,000. The ADDS system which comprises alumni as well as corporate donors, university trustees, parents, and other friends of the institution currently contains over 75,000 records. As configured for the mainframe, these alumni and donor development records reside in over forty separate files linked by a unique key such as the alumnus' (or donor's) ID or Social Security Number. Each of these discrete files or segments contains fields for related variables, for instance those connected with an individual's academic degree, employment history, pledge history, donor history, or detailed gift record; expenses related to a particular campaign; or gifts to various fund (e.g., annual, capital, or restricted scholarship) designations.

Of course, the "basic record on an alumnus or an alumna is the heart of the information system" (Maves, 1988, p. 16) and, as such, constitutes the most important segment; among other elements, this basic record includes the individual's "current and former names, current address (home, business, and possibly seasonal addresses), business title, phone number(s), spouse's name, birth date, degree(s)," college major(s), and gender (Maves, 1988, p. 16). Such basic data proved available and reasonably consistent for most of Hartford's constituents although the degree of detail varied due to the newness of the system.

Conversely, other segments essential to a solid alumni and donor research base have not been uniformly maintained -- and in some cases have not been utilized at all. Student retention research by Tinto (1988) and others stresses the importance of student involvement in extra-curricular activities as one measure of social integration which, in turn, "suggests a strong connection [may exist] between the quality of the undergraduate experience and subsequent donor behavior" (Volkwein; Webster-Saft; Xu; & Agrotes, 1989, p. 10). McNally (1985) also posits a link between membership in student organizations and loyalty to the university, a more direct indicator of alumni giving. Despite these clues from the literature, college activities are not regularly entered into the University's database. Nor are post-college activities, memberships, and honors recorded. However, the blank fields and a rudimentary coding structure do exist. Similarly, segments for spouse, spouse employment, spouse academic degrees, children, gift club designations, and prospect codes presently remain underutilized or vacant. As studies undertaken by Melchiori, Volkwein, McNally, and Grill and others clearly indicate, such data are integral to any serious research effort.

Broadening the Database

"Given good basic records. . .files can be expanded to include other documents" (Maves, 1988, p. 16). Hence, in conjunction with representatives of various administrative and academic departments, the Office of Planning and Institutional Research has developed a multipurpose alumni survey to verify and supplement existing information. The instrument will be particularly valuable in gathering more complete data on the graduate's activities, additional education, spouse, children, etc., to provide a foundation for alumni profiles and giving pattern research. Moreover, specific sections of the survey are targeted to assessing educational outcomes (e.g., how well prepared the alumnus/alumna was for work or graduate study) and to discerning the graduate's interest in various alumni activities. To accomplish this, the final survey will consist of two distinct modules: (1) one two-page biographical, demographic, alumni interest section which will be sent to all alumni and (2) a two-page section examining the graduate's satisfaction with his or her educational experiences at the University of Hartford and how well those experiences prepared the individual for post-baccalaureate education and career. Given inevitable curricular changes, this segment is specifically intended for those who have graduated within the past ten to fifteen years. A special comments section will allow for more lengthy narrative.

Furthermore, using the graduate's Social Security Number as the key, records from the downloaded ADDS file can be linked with those contained in applicant, enrolled student, or financial aid databases which also are routinely downloaded for analysis by Planning and Institutional Research. Among examples of such data fields are college grade point average and financial aid, a factor which proved integral in studies reported by both Melchiori (1988) & Grill (1988).

In addition to information available through mainframe system downloads and the survey, the graduate's personal income and donor potential can be roughly approximated from national marketing data and Department of Labor statistics on average salary by occupation and housing value by zip code. While income level may not successfully distinguish donors from non-donors, Grill (1988) does report a positive relationship between income and amount of gift. As Maves (1988) advises, the designers have looked beyond the present to identify all information that conceivably could be of value in the future.

Designing the Prototype

Meanwhile, a test download of available data provided the resources necessary to begin designing a prototype alumni and development system. General goals for this system involved (1) profiling the entire alumni population and (2) increasing fund raising ability from information obtained by analyzing a variety of alumni subpopulations (e.g., "mega-donors," donors, non-donors). The ideal system, according to Maves (1988), is

> intrinsically flexible, expandable, and free of errors. It takes wing on its intensively electronic design, which uses state-of-the-art computer components that can expand to accommodate future techological advances and changing programmatic needs.
>
> ... Data are housed, by category, in totally integrated, fully relational databases. These allow the linking of selected data elements across the system, full system-wide search capabilities, data merger, and data analysis. No item of information on an alumnus or an alumna is inaccessible, impossible to include in an analysis, or incapable of being related to other items.
>
> ... Users of the system will find themselves in a friendly working environment. They will be able to ask the system questions, generate reports, edit information, and select data on as exclusive and specific a basis as they wish to, without needing extensive knowledge of the technology that supports the system. (p. 22)

Decision Support System Design

The University of Hartford has, indeed, worked to transform this ideal of timely and accurate provision of alumni and donor information into reality. Menus, screens, and interactive computing on a personal computer control relational database (Foxpro) and statistical analysis (SPSS PC) programs, thereby satisfying administrators' information requirements with minimal programming assistance. A data dictionary system, programmed in Foxpro, provides a cross-reference and mechanism for generating macro commands that control extraction, download, and import of mainframe data files into the DSS reporting system on the personal computer. The data dictionary is available to the administrative user through a Foxpro view screen or through a Foxpro report form. In preparing a report request, the administrator refers to this data dictionary for the name and description of the data files and data fields he or she wishes to use. Armed with this information, the administrator then

moves into the Common User Environment (CUE). Programmed in Foxpro, the CUE system of menus and screens saves all the user's specifications (i.e.,for studying particular subgroups of donors) in a report requirements database until the user wants the selected database or statistical analysis program executed.

To execute a report request that already exists in the report directory, the administrator only has to scroll through the organization, subject, and report light-bar menus and select the appropriate report description from among those listed. When the user hits the key to confirm his choice, the proper data files are processed, using the correct database, statistical analysis, or report program - all under control of the parameters specified earlier in the CUE report request.

To create or modify a report request the administrator or information analyst also uses the CUE system, responding to prompts on the screen much like completing a questionnaire. The CUE responses (i.e., database names and directories) are saved as report request parameters (or controls) in a single record, uniquely identified by a report name and description in the database. The CUE questionnaire asks the user to identify the database used for input as well as the directory and subdirectory where that file is located, and organization, subject, or report type codes associated with the request. Hence each administrative office can have its own report directory while still permitting access to authorized users in other offices of the University. Using the data dictionary as a reference, the administrator can use CUE screens to specify data fields and criteria for record selection, data fields for indexing or sorting records, and data fields used in analysis or reports. Selection of records can also be controlled by the administrator by naming systems tables or record key files used to trigger selection from the data file.

Based on the type of output the user selects, the administrator can name an intermediate data file or aggregate data file to be processed in a separate pass, specify Foxpro Browse or View Screen programs for viewing the data on screen, name a Foxpro Report Form used to prepare roll-up listing and tabulation reports, select a Foxpro data analysis or custom report program, run a prepared SPSS PC Tables or statistical analysis program, or indicate the directory and file name where database and statistical reports are sent as print files for EIS menu access.

Administrators' report request specifications are listed in a hard copy report directory, are available for editing and browsing on the screen, and are associated with reports through title pages, report headings, and screen titles. Database programs are controlled through user defined report parameters by using the macro language available in Foxpro. SPSS PC Statistical Analysis programs are controlled by the user defined parameters in other ways, (1) sending macro commands to SPSS PC INCLUDE files as completed commands, (2) generating SPSS commands from macros and systems tables to create entire programs.

Another feature of the DSS implementation strategy takes advantage of the WINDOWS, BROWSE, and VIEW SCREEN facilities in Foxpro. Using a light-bar menu system the administrator can have access to as many as ten summary tables or database files, and can review records by selecting which window to open, zoom to a full-screen view, pan across the screen to select additional columns, and create filters that bring selected records to the screen based on user specified criteria. Whether applied to individual alumni/donor records, profiles of alumni/donor market segments, or income/expense reports for fund raising campaigns, the ease of use, flexibility and power of such interactive computing options has vast analytical potential for both researchers and administrators.

Executive Information System Design

At the highest levels of university administration, an Executive Information System presents decision makers with information on demand, providing easy and convenient access to the institutional case statement, strategic plans, annual reports, resource requirements, social/economic outcome assessments, financial plans, and fund raising results. Information is prepared in summary form at appropriate levels of detail for overview, diagnosis, and analysis of strategic issues, and for selecting fund raising targets by market segment.

The EIS implementation strategy makes it easy for decision makers to find the information they need, and easy for developers and information suppliers to build and maintain the necessary menus and screens. The basic EIS delivery system is linked using two Lotus 123 spreadsheet templates that can be copied and adapted many times to build entire information systems. The first spreadsheet is designed for simplicity and efficiency; it uses a light-bar menu to tie spreadsheets into a complete menu system. It imports text files for viewing or printing, and it retrieves selected spreadsheet reports and models. The second spreadsheet also uses a light-bar menu to connect the menu system, but it is designed to provide the maximum flexibility and power in importing and exporting files, computing indicators

and analyzing trends, preparing graphs, and printing desk-top quality reports. Macro interfaces are built into the spreadsheet to import print files produced by database or statistical analysis programs. Using the Lotus macros and the data parse command to convert text tables into labeled rows and columns of data, the receiving menu spreadsheet can present the resulting data for computation, modeling, graphing, viewing, or printing. By linking rows and columns of the spreadsheet to a graphics output buffer, the data and indicators can be graphed using graphics macros embedded in the spreadsheet, or a custom graphics package (e.g., Foxgraph, Harvard Graphics, Graph Writer, Microsoft Chart). Interpretive text, statistical tables, and graphs that EIS has produced can then be integrated for presentation of issues under menu control for viewing or printing as a spreadsheet (in ALLWAYS), for printing in a desk-top publishing report, or for slide-show presentation.

Generating the Reports

While the Office of Institutional Advancement will continue to generate its own weekly, bi-weekly, and monthly operational reports, major research and statistical analyses will performed by Planning and Institutional Research. Examples of some especially useful analyses/applications include ranking donor potential, mapping geographical distribution of alumni, monitoring trends in alumni careers, profiling segments of the alumni (and donor) population, assessing alumni satisfaction with their academic programs and quality of campus life, and using national databases for inter-institutional comparisons. This decision support system will build upon and extend the capabilities of the Office's present student retention system by tracking alumni and their giving trends longitudinally from the time of graduation and by examining giving levels clustered according to their responses as seniors on Pace's College Student Experiences Questionnaire.

Dunn has clearly articulated the strategic issues and research questions of central importance to alumni and donor development (Dunn, 1986; Melchiori, 1988). The University of Hartford's implementation of a comprehensive research strategy on behalf of alumni development and fund raising will necessarily lag behind development of a current alumni/donor database, a database that goes beyond directory and gift records to include prospect research and alumni surveys. In-depth, research-based studies can be conducted once additional data (e.g., on activities, spouse, and children) are available and all (or at least a majority of) students and graduates of the last thirty years are entered into the system as prospects. Melchiori (1988) views such empirical research as

> a supplement to the well-established tools of case-by-case tracking and analyzing, volunteer networking, and research on individual prospects. In long-range planning empirical research should come first, to set general parameters. In day-to-day fundraising operations...empirical research on alumni...identifies market segments, sets priorities for prospects within those groups, and suggests giving potential. (p. 64)

The relationship between alumni/donor giving profiles and patterns of giving will be examined by applying the techniques of cluster analysis and discriminant analysis to multi-year giving records. The criterion measures for such analyses will include the frequency of giving, the amount of giving, and designations of gifts. Predictors, as outlined in the student and alumni/donor sections of Figure 1, will consist of personal/biographical, academic, career, activity, interests, attitudes toward the University, and estimated wealth.

Following guidelines for applying alumni research to fund raising outlined by (Melchiori, 1988) and suggested by (Connelly, 1986), the characteristics of large donors, frequent donors, special gift donors, and non-donors will be analyzed to identify significant differences in profiles. One especially exciting element of this research involves exploring the relationship between graduates' emotional attachment to the University and their level of contribution, a link which Spaeth and Greeley (1970) described as particularly strong among alumni of private institutions.

To select a peer comparison group of institutions for analyzing fund raising income and expense, institutional data available from the Council for Financial Aid to Education will be analyzed using a decision support and statistical analysis system developed by Glover and Mills (1990) for comparative analysis of enrollment and financial strength.

Building on the University's strategic planning and budgeting process and modeling systems for analyzing alternative financial scenarios, research studies will assess the feasibility of future fund raising campaigns based on estimates of donor giving potential and past fund raising success.

Conclusions

As a private, tuition and enrollment dependent institution, the University of Hartford has given high priority to improving the quality of information available for alumni relations and fund raising programs. Perhaps increasing communication with graduates -- or at least demonstrating a higher level of knowledge and accuracy -- will encourage further identification with the University and lead to heightened alumni interest in its welfare.

Preliminary results of a study undertaken to discover a model for fund raising effectiveness indicate that administrators desiring to strengthen fund raising programs should concentrate on the following areas: improving community and donor relationships, gaining the confidence of the institution and the participation of its president, building commitment among staff to improve outcomes, interacting with people (including staff), and participating in other cultivation/solicitation activities (Loessin & Duronio, 1989). With its flexibility and responsiveness to standard as well as ad hoc queries, the decision support system described above is an ideal companion to such efforts; by providing in-depth analyses and facilitating market segment and prospect research it allows the institutional advancement professional to focus energy where it is most needed. Moreover, research-based studies can uncover evidence which suggests the need to pursue additional angles or offer guidance on an uncharted course.

Certainly the alumni list continues to offer a measure of the influence of a college or university in current affairs just as in the days of Edwin Slosson. Otherwise John F. Kennedy's Harvard connection and George Bush's old Yale ties might seem inconsequential. However, as Dunn (1988) emphasizes, institutions are finally recognizing alumni as something more: "Alumni are the institution's extended family. As we awaken to that fact, we find we need to know and do a great deal more than we have in the past to keep the relationships warm, knowledgeable, and mutually supportive" (p. 86).

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